

Summary – South Dakota Medical Professions Student Preparedness Training

On February 6, 2009, one hundred and eighty medical professions students were trained in the response to large scale disasters. All first and second year medical students, physician assistant students and nursing students from the University of South Dakota participated in a day long educational event designed to familiarize them with their potential role in disaster response. Medical professions students are not yet licensed medical professionals; however, they possess valuable skills and abilities which would prove beneficial in a large scale emergency when licensed professionals are overwhelmed.

This educational event was a collaborative effort between the University of South Dakota, Sanford School of Medicine, the South Dakota State Medical Association, the Physician Leadership Initiative, the City of Sioux Falls Health Department, and the South Dakota Department of Health.

As a pre-requisite to the day long educational event, students were required to complete the online course entitled: Core Disaster Life Support (eCDLS). This course is an introduction to the skills and concepts necessary for the health and medical response to disaster. It is a competency based course approximately four hours in length with both pre and post tests. This and other disaster medical courses are administered by the National Disaster Life Support Foundation.

The day of instruction began with a series of plenary presentations lasting one hour and fifteen minutes followed by two hours of small group concurrent sessions, a one hour and fifteen minute functional triage exercise, and concluding with a thirty minute debriefing and wrap-up.

Dr. Janet Lindemann, USD Dean of Medical Student Education welcomed the students and set the stage by describing the important role medical professions students could play in large scale emergencies. Dr. Jack Horner from the National Disaster Life Support Foundation gave an



introduction and historical overview of the health and medical response to disaster. Dr. Matthew Owens, a South Dakota Physician Leader, introduced the principals of TRIAGE and the emerging standard for mass casualty triage, SALT. Dr. Howard Burns, also a South Dakota Physician Leader, discussed the DISASTER paradigm. The plenary presentations were concluded by Mr. Tom Welch, South Dakota Office of Emergency Management with a presentation on incident command.

At the conclusion of the plenary session, students were broken up into twelve pre-determined small groups of fifteen students each. One student from each group was also pre-designated as the radio student for their particular group. Each designated radio student was provided with a hand-held digital radio and given brief instruction on its operation.

Each of the twelve groups then moved to their assigned small group session for the start of the concurrent workshops. The small group workshops were conducted in twenty minute sessions covering six preparedness topics. Workshop sessions were designed to provide a very brief overview with the majority of the session devoted to the development of hands-on skills and techniques. Each workshop session was led and assisted by a minimum of two instructors up to a maximum of six instructors depending upon the particular topic. At the conclusion of each twenty minute session, hand-held radios were used to signal each group that it was time to move to the next session. Six topics were covered in the workshops with two simultaneous sessions of each. Topics included:



Personal Protective Equipment – An introduction to the proper selection and use of PPE was discussed along with demonstrations of Powered Air Purifying Respirators and N-95 masks. Each student had the opportunity to DON and DOFF an Air-Mate PAPR and to converse and communicate while wearing PPE.

Immunizations and Anaphylaxis – Instruction was given on the proper administration of various immunizations and the recognition and treatment of anaphylaxis. Each student had the opportunity to administer and receive a saline injection to and from a fellow student.

Autoinjectors and Chempack – An introduction to the South Dakota Chempack stockpile was provided along with training on the recognition of signs and symptoms of nerve agent exposure. Students also had the opportunity to administer MarkI antidote trainer kits to fellow students. Discussion included the pharmacology of nerve agent antidotes.

Smallpox Vaccination Technique - Students were introduced to the prospect of large scale vaccinations for smallpox. Proper technique was demonstrated along with the current contraindications for vaccination as well as how to interpret various vaccination outcomes. Adverse reaction events were presented and discussed. Students also had the opportunity to administer saline to fellow students utilizing smallpox vaccination tools and techniques.

State Radio System – Instruction was given on the basic operation of the statewide digital radio system utilizing hand-held radios. Features and limitations of the system were discussed. Students also had the opportunity to initiate communications to the central office over two hundred miles away. Students from this session also gave the command over the radio to each of the other small group sessions when it was time to move to the next session.

Points of Dispensing - Students were briefed on South Dakota POD locations and operations. Their potential role in POD operations was discussed and each student was assigned to a specific POD location. Potential student deployment scenarios were discussed along with the logistics of deployment. Students are typically assigned to a POD location in or near their hometown.

At the conclusion of the small group sessions, a box lunch was served and preparations were begun for the functional triage exercise. The scenario for the exercise was a pipe-bomb explosion involving one hundred middle school children on a tour of the University. The medical professions students were pre-assigned roles for the exercise. Sixty were identified as responders and were given red vests to wear during the exercise. One hundred were assigned as victims with a pre-determined signs and symptom card inserted in their name badge for the day. Ten were assigned as evaluators and ten in various other roles. Chris Qualm, South Dakota Department of Health, assumed the role of incident commander.

The exercise was conducted in three, twenty minute sessions after which the students would exchange roles and the exercise was repeated. In this manner, every student had the opportunity to play the role of responder as well as a couple other roles. The objective for the exercise was to introduce students to a mass casualty event and to give them the opportunity to practice mass casualty triage skills learned earlier in the day. Triage tags were used to identify victim triage status. Spot checks by Physician Leaders indicated less than a five percent disagreement with Physician Leader triage assessments.



After the exercise, students gathered in the lecture hall where Physician Leaders and others gave their observations of the exercise. Student evaluators also provided valuable observations and comments about the exercise. Lively discussion and student feedback provided training organizers with numerous opportunities to improve the next medical professions student training event.

It is our intent to repeat the medical professions student training every two years. It is also our goal to expand this opportunity to other medical professions students in South Dakota. The potential target number of students exceeds one thousand eight hundred on a two year cycle.

The exact cost of conducting this event has not been calculated. Thirty-seven individuals participated as planners, coordinators, presenters, or facilitators. Please note the list of participants below. Nearly all of the faculty and staff providing the training conducted their activities as part of their day to day responsibilities. Travel and per diem was typically paid by their respective organizations. Incidental costs including meals totaled \$6,118.00. The cost of less than \$34.00 per student has proven to be very cost-effective. This type of training would not be possible without the in-kind contribution by all the organizations participating.

The value of having one-hundred and eighty medical professions students trained, ready, willing, and able to assist with a health and medical response may never be known. However, we do know this is a human resource which could prove invaluable in any large scale public health and medical emergency.

Student Training Workshop - List of Faculty

Planners and Coordinators

- Darlene Bergeleen, Community Health Services Administrator, SDDOH
- Howard Burns, MD, Physician Leader
- Bill Chalcraft, Public Health Preparedness and Response Administrator, SDDOH
- Sandy Frentz, RN, Health Program Coordinator, Sioux Falls Health Department
- Jack Horner, President, National Disaster Life Support Foundation, Inc.
- Chuck Kevghas, Strategic National Stockpile Coordinator, SDDOH
- Rick LaBrie, Public Health Preparedness and Response, SDDOH
- Janet Lindemann, MD, Dean, Medical Student Education, USD, SSOM
- Tom Luzier, MD, Aberdeen Asthma and Allergy
- Kathy Magorian, RN, USD School of Nursing
- Matthew Owens, MD, Physician Leader
- Louise Papka, PA, Physician Assistants Program
- Teresa Pederson, School of Medicine Program Assistant
- Chris Qualm, Regional Public Health Preparedness and Response Coordinator, SDDOH

Presenters and Facilitators

- Tammy Austad, RN, Sanford Vermillion Medical Center
- Susan Bak, RN, Sanford School of Medicine
- Cathy Logue, RN, Sanford School of Medicine
- Morris Forsting, Sioux Falls Health Department
- Julie Girard, Sanford Vermillion Medical Center
- Michelle Lichtenberg, RN, USD School of Nursing
- Regan Luken, RN, USD School of Nursing
- Jerry Majzner, Regional Public Health Preparedness and Response Coordinator, SDDOH
- Marilyn Moor, RN, Sanford School of Medicine
- Jill Munger, RN, SDDOH
- Gary Myers, Trauma Coordinator, SDDOH
- Greg Santa Maria, Emergency Coordinator, Sanford Health Systems
- Kevin Schmidt, State Radio Communications
- Arica Schuknecht, Sanford School of Medicine
- Peggy Seurer, RN, SDDOH
- Carol Taylor, SDDOH Program Assistant
- Peggy Tisdale, Regional Public Health Preparedness and Response Coordinator, Contractor
- Linda Joy Vanhove, RN, SDDOH
- Tom Welch, Regional Coordinator, Office of Emergency Management, State of SD
- Barbara Wiechmann, RN, SDDOH
- Becky Wolff, RN, USD School of Nursing
- Jean Yockey, RN, USD School of Nursing
- Michael Zielenski, BT Disease Intervention Specialist, SDDOH